

Exercise Load Measurement Insole (ELMI), Phase I

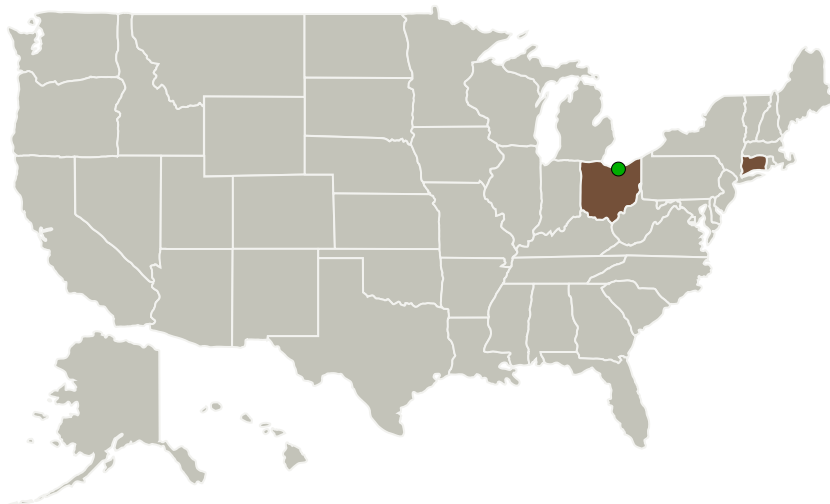
Completed Technology Project (2012 - 2012)



Project Introduction

The Exercise Load Measurement Insole (ELMI) is a system that is designed to measure normal and shear foot forces during exercise. The ELMI system is lightweight, portable, unobtrusive, and its versatility allows it to be used for many purposes outside of exercise load measurement and study. At the heart of ELMI is an innovative sensor design that when configured in an array can measure full foot normal and shear loads simultaneously. The sensor design allows for normal forces to be measured in compression, while both lateral and longitudinal forces can be measured in shear. The normal and shear sensitivity can be customized for different specifications, and even stacked for graded sensitivity, if desired. The result can be placed in an array and integrated into a shoe without affecting user operation.

Primary U.S. Work Locations and Key Partners



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Organizations Performing Work	Role	Type	Location
Materials Technologies Corporation	Lead Organization	Industry Minority-Owned Business, Small Disadvantaged Business (SDB)	Monroe, Connecticut
● Glenn Research Center(GRC)	Supporting Organization	NASA Center	Cleveland, Ohio

Primary U.S. Work Locations

Connecticut	Ohio
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Project Transitions

**February 2012:** Project Start**August 2012:** Closed out

Closeout Documentation:

- Final Summary Chart(<https://techport.nasa.gov/file/138142>)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Materials Technologies Corporation

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

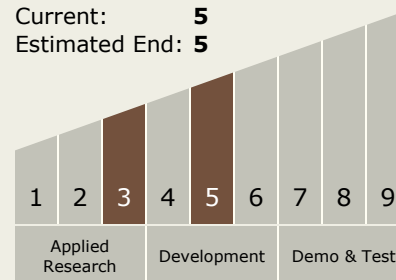
Program Manager:

Carlos Torrez

Principal Investigator:

Yogesh Mehrotra

Technology Maturity (TRL)

Start: **3**Current: **5**Estimated End: **5**

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Technology Areas

Primary:

- TX06 Human Health, Life Support, and Habitation Systems
 - └ TX06.3 Human Health and Performance
 - └ TX06.3.2 Prevention and Countermeasures

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System